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EXAMINER	
FORD, ALLISON M	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/940,682	TOWNSEND, DAVID E.	
	Examiner	Art Unit	
	ALLISON M. FORD	1651	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 June 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5,7,10-13,15,16 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,7,10-13,15,16 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Request for Continued Examination

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/4/2008 has been entered.

Claims 1 and 25 have been amended; claims 2-4, 6, 8, 9, 14, 17-24 and 26 are cancelled; claims 1, 5, 7, 10-13, 15, 16, and 25 remain pending in the current application, all of which have been considered on the merits. All arguments have been fully considered, and are each addressed below, as appropriate. Rejections/objections not repeated herein have been withdrawn/overcome.

Priority

Acknowledgement is made of applicant's claim for priority to provisional application 60/228,956, filed 28 August 2000. This provisional application provides support for all claims; thus all claims are given the effective filing date of 28 August 2000.

Applicant's claim for the benefit as a CIP of prior-filed application US 08/484,593 (now US Patent 6,387,650) under 35 U.S.C. 120 is also acknowledged. However, this prior filed application does not provide support for the subject matter of current claim 7, which requires the conditionally detectable marker to comprise tetrazolium red. Therefore, only claims 1, 5, 10-16, 25 and 26 receive the benefit of the effective filing date of 7 June 1995; the effective filing date of claim 7, for purposes of applying prior art is considered to be the filing date of the provisional application 60/228,956: 28 August 2000.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 5, 7, 10-13, 15 and 16 are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 has been amended to define the target microorganism as being selected from the group consisting of *Salmonella, Listeria* <u>*monocytogenes*</u>, and Campylobacter (underlined portion being newly added).

While Applicant has preemptively asserted that the species of *Listeria monocytogenes* is in compliance with the written description requirement because *L. monocytogenes* is a well known species of the genes *Listeria*, and thus one of ordinary skill in the microbiological arts would appreciate that Applicant was in possession of the *L. monocytogenes* species at the time of filing, such is not found persuasive; thus the new limitation is considered to introduce new matter that is not supported by the original disclosure. It is noted Applicants have cited *In re Wertheim* and *In re Smith*, which set forth that the specification need not provide *in haec verba* support for limitations, but need only to describe the claim limitation such that the person of ordinary skill in the art will recognize from the disclosure that which Applicants invented. However, it is respectfully submitted that this does not permit introduction of limitations not supported to narrow the claims. In *Smith* the courts clearly deny that disclosure of a genus and species provides support for a sub-genus. *Smith* states "Whatever may be the viability of an inductive-deductive approach to arriving at a claimed subgenus, it cannot be said that such a subgenus is necessarily always implicitly described by a genus encompassing it and a species upon which it reads."

See *Smith* at 683. In the instant case, the fact that the species of *Listeria monocytogenes* was generally known in the art is not sufficient to show that Applicant had possession of the exact species now being claimed. See MPEP 23163.05.

Thus the amendment to claim 1 fails to comply with the written description requirement, and the claims are appropriately rejected under 35 USC 112, first paragraph. Applicant is required to cancel the new matter in the reply to this Office Action.

With regards to the rejection of claims 1, 5, 7, 13, 15 and 16 under 35 USC 112, first paragraph, as lacking written description, Applicants have argued that one of ordinary skill in the art would immediately understand that the inventor was in possession of the claimed species of aminopeptidase substrates at the time the application was filed. Applicants have argued that aminopeptidase were known, and due to their chemical nature and properties, substrates for each aminopeptidase were known. Applicants further references several works that show the target microorganisms (of the current claim) were known to lack certain aminopeptidase, specifically *Listeria monocytogenes* lacks glycine aminopeptidase activity and aminopeptidase specific for DL-alanine- and D-alanine based substrates, whereas all other *Listeria* bacteria possess these aminopeptidase activities. *Salmonella* does not possess pyrrolidonyl aminopeptidase activity, but other bacteria, such as *Citrobacter,* do possess this aminopeptidase activity.

Copies of the non-patent literature referenced therewithin (Clark et al, Journal of Clinical Microbiology, 1997 and Bennett et al, Letters in Applied Microbiology, 1999) were not supplied, but as a courtesy, copies of the references were obtained by the Examiner, and are being made of record in this action Applicants' arguments have been fully considered.

However, the arguments are not found persuasive.

The scope of "non-target microorganisms" must be interpreted broadly as "all microorganisms that are not the target microorganism." Therefore, in order to be useful in the instantly claimed composition, a particular aminopeptidase must be present in every microorganism except the microorganism of interest (target). It remains that Applicants have not identified even one aminopeptidase that is specifically *absent* from the target microorganisms of interest, but is *present* in *all* other microorganisms. Without identifying which aminopeptidase fall within this category one could not determine the corresponding substrates which would be appropriate for inclusion in the claimed composition, and thus the invention, as claimed, is not fully described by the specification.

With regards to the examples cited by Applicants, it is noted that Applicants have identified some aminopeptidases that are absent from some of the target microorganisms, however the evidence relied upon is not sufficient to show that those same aminopeptidases are present in *all* non-target microorganisms. For example, each of Monget et al and Clark et al are limited to testing of the same six Listeria species, and thus cannot be considered representative of all non-target microorganisms as they fail to test even any non-Listeria species. Bennett et al shows that 'target microorganism' *Salmonella* do not possess the aminopeptidase (PYRase) necessary to cleave a substrate L-pyroglutamic acid, but *Citrobacter* do possess the PYRase peptidase. However, it cannot be said that L-pyroglutamic acid is a suitable substrate for use in the instant invention because *E.coli* are shown to not possess the aminopeptidase (PYRase) necessary to cleave the substrate; thus the L-pyroglutamic acid does NOT satisfy the limitation of the current claim requiring a substrate for an aminopeptidase absent from the target microorganism, *but present in all non-target microorganisms*.

Therefore, it remains that Applicants have not shown sufficient evidence that they are in possession of even a single species of aminopeptidase substrates that would satisfy the current claim limitations, And thus the claims remain rejected for the reasons of record. It appears claim 25 was

erroneously excluded from the rejection of record in the previous action, it is being re-included in this action:

Claims 1, 5, 7, 13, 15, 16 and 25 stand/are newly rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are found to lack written description, as the specification does not disclose which aminopeptidase substrates are encompassed by the claimed composition (being aminopeptidase that are absent from the disclosed target microorganism).

The claims are currently very broad. The claimed composition is interpreted as comprising, amongst other elements, a substrate for an aminopeptidase, wherein the aminopeptidase is substantially absent from the target microorganisms and is cleaved by substantially all non-target microorganisms. The term "all non-target microorganisms" is interpreted to include any and all microorganisms that are not the target microorganism Therefore in order to satisfy this limitation, the composition must include a substrate for an aminopeptidase which is absent from the target microorganisms, defined as *Salmonella, Listeria monocytogenes,* and *Campylobacter,* but is present in all other microorganisms. The instant written description rejection is based on the fact that Applicants have not provided even a single example of an aminopeptidase which meets this limitation.

To satisfy the written description requirement, the specification must provide sufficient description of the claimed product (in the instant case, the composition comprising the aminopeptidase substrate, as defined by the claims) to show that Applicant was in possession of the claimed invention.

It is noted the specification does provide numerous aminopeptidase substrates and even numerous L-alanine aminopeptidase, the disclosed species are representative of aminopeptidase substrates, in

general, and of L-alanine aminopeptidase substrates; however, the claimed composition does not include "aminopeptidase substrates," in general, or even "L-alanine aminopeptidase substrates," but aminopeptidase substrates wherein the aminopeptidase is substantially absent from at least one of the listed target microbes, and wherein the aminopeptidase is present in all non-target microbes.

Therefore, the invention as claimed is directed to a narrower subgenus of aminopeptidase substrates than disclosed in the specification. Even though Applicants have described a *broader* genus than that which they are claiming, the problem of a lack of written description is still present because Applicant's disclosure fails to define or describe a single example of an aminopeptidase absent in the target microorganisms, but present in all non-target microorganisms, much less a representative number of species of such, which would be necessary to show Applicant was in possession of the *narrower* subgenus of substrates being claimed.

When the scope of the claims is narrower than what is disclosed in the specification, there must be support and description for that specific subgenus, by itself, not just as falling within the broader genus. It has been held that disclosure of a "laundry list" of species does not constitute a written description of every species in the genus, much less a subgenus, because it would not "reasonably lead" those skilled in the art to any particular species, See *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571, 39 USPQ2d 1895, 1905 (Fed. Cir. 1996). Furthermore, as discussed above with respect to new matter, in *In re Smith* the courts clearly deny that disclosure of a genus and species provides support for a sub-genus. *Smith* states "Whatever may be the viability of an inductive-deductive approach to arriving at a claimed subgenus, it cannot be said that such a subgenus is necessarily always implicitly described by a genus encompassing it and a species upon which it reads." See *In re Smith* 458 F.2d 1389, 59 (CCPA 1972) 1025, 173 USPQ 679, at 683.

With regards to the rejection of claims 1, 5, 7, 10-13, 15, 16 and 25 under 35 USC 112, first paragraph, as lacking enablement, Applicants have argued that the instant specification does provide sufficient guidance and teachings on how to successfully make and use the instant invention to detect all named target microorganisms from mixed samples. Applicants have asserted the aminopeptidase must only be determined to be present in non-target microorganisms in the sample, not all microorganisms. Applicants argue that testing various bacteria to determine the presence or absence of aminopeptidase activity is routine, citing Peterson et al, Kampfer et al, and Westley et al, and thus such would not constitute undue experimentation. Applicants further assert that in most samples where biological contamination is concerted, the artisan of ordinary skill has a preemptive knowledge of the type of contaminating bacteria which may be present, thus the types of 'non-target' microorganisms suspected to be present would be much smaller than all non-target microorganisms. Applicants further assert the use of a growth-supporting medium for the specific enrichment of a target microorganism would have further reduced the non-target microorganisms in the sample. Applicants have submitted Exhibits A-C to support the art accepted definition of specific enrichment for target bacteria, and assert that use of such media would prevent confusion or false-positives obtained from gram-positive bacteria in the sample.

The arguments are not found persuasive.

In response to Applicants' argument that testing microorganisms for aminopeptidase activity was routine, it is accepted that means for testing bacteria for aminopeptidase activity was known in the art; however, to properly enable an invention, the specification must disclose how to make and use the invention *without undue experimentation* (See Wands, 8 USPQ2d 1404). As the claims currently read, successfully using the composition for the intended use would require determination of an aminopeptidase that is absent in the target microorganisms, yet present in all other non-target microorganisms. While it was known how to carry out the required screening assays, actually performing such assays on *all* microbes is considered to be beyond the boundaries of routine experimentation. It is

noted that Applicants have argued the aminopeptidase must only be present in non-target microorganisms in the sample; however, it is respectfully submitted that there is no limit on the number or variety of microorganisms which may be present in the sample, thus this limitation fails to limit the scope of the claim. Similarly, the fact that Applicants have asserted one of ordinary skill would have an idea of what non-target microorganisms would likely be present in the sample, again does not actually limit the number or type of microorganisms which may be provided in the sample, and thus would need to be tested for.

In response to Applicants' argument that selective growth media which would support only the growth of the target microorganism was known in the art, it is acknowledged that a growth medium for specific enrichment of a target microorganism would be expected to selectively enhance the growth of the target microorganisms, however, this raises another inconsistency: If the growth-supporting media 'specifically enriches' the sample to the point where no non-target microorganisms may grow, inclusion of the signal moiety ('confirmation indicator') would be unnecessary, as no non-target microorganisms would ever be present to give a positive reading; or if the growth-supporting media only enhances the growth of target microorganisms compared to non-target microorganisms, such non-target microorganisms are still present, and it would still need to be determined which aminopeptidase would be appropriate (which has been deemed non-enabled). Based on the definitions provided in the materials included as Exhibits A-C, the term 'enrichment medium' is being interpreted as a medium that encourages the growth of a desired microbe, while inhibiting (but not preventing) the growth of other microbes; thus, the 'non-target microorganisms' may still grow in the growth-supporting medium specifically enriched for a target microorganism, and thus the rejection of record stands.

It appears claim 25 was erroneously excluded from the rejection of record in the previous action, it is being re-included in this action:

Claims 1, 5, 7, 10-13, 15, 16 and 25 remain/are newly rejected under 35 U.S.C. 112, first paragraph, as being enabled for only a limited scope of the instantly claimed invention. The specification, while being enabling for production and use of compositions for identifying a pure culture sample of Gram-negative bacteria as *Campylobacter*, said compositions comprising (i) a conditionally detectable marker that functions as a viability marker; (ii) an L-alanine aminopeptidase substrate; and (iii) a growth-supporting medium specific for *Campylobacter*, does not reasonably provide enablement for production and use of compositions for detecting any target microorganism in any sample, or even for detecting *Campylobacter* in a mixed sample, or for differentiating between *Campylobacter* and any Gram-positive bacteria, wherein said composition comprises (i) a conditionally detectable marker that functions as a viability marker; (ii) a substrate for an aminopeptidase, wherein said aminopeptidase is substantially absent from the target microorganism; and (iii) a growth-supporting medium for *Campylobacter*. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make or use the invention commensurate in scope with these claims.

Analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention without undue or unreasonable experimentation. See *Mineral Separation v. Hyde*, 242 U.S. 261, 270 (1916). The key word is 'undue,' not experimentation.' " (Wands, 8 USPQ2d 1404). The factors to be considered in determining whether undue experimentation is required are summarized In re Wands 858 F.2d 731, 8 USPQ2nd 1400 (Fed. Cir, 1988).

Applicant's claims are directed to a composition for detecting a target microorganism, wherein the composition comprises (i) a conditionally detectable marker that undergoes a color change when reacted upon by a viable microorganism (a 'presumptive indicator'); (ii) an aminopeptidase substrate

comprising a signal moiety capable of providing a detectable signal when cleaved, wherein the aminopeptidase which would react upon the substrate is substantially absent from the target microorganism, but is present in non-target microorganisms (a 'confirmation indicator') (See Spec. pg. 17); and (iii) a growth-supporting medium specific for enrichment of the target microorganism. A target microorganism is detected when a sample, placed in contact with the claimed composition, produces a positive signal by the 'presumptive indicator,' but fails to produce a positive signal by the 'confirmation indicator'; if non-target microorganisms are present, two positive signals would be produced. Though the claims are not directed to a method of using the claimed composition, it is necessary to set forth how the claimed composition would be used, so as to determine whether the disclosure enables one of ordinary skill in the art to successfully make and use the claimed composition.

Therefore, in order to successfully make and use the claimed composition, one of ordinary skill in the art would have to be able to determine (a) a conditionally detectable marker that would undergo a color change when reacted upon by any viable microorganism; and (b) an aminopeptidase substrate comprising a signal moiety that would produce a detectable signal when cleaved by the appropriate aminopeptidase, wherein the aminopeptidase is substantially absent from the target microorganism, but would be present in all other microorganisms. A review of the specification shows that sufficient number of viability markers were disclosed in the specification (e.g. Vital Dyes, specifically tetrazolium red), or were otherwise known in the art, to enable the artisan of ordinary skill to be able to select an appropriate viability marker for use in the composition. However, with regards to the aminopeptidase substrate which would satisfy the claim limitations, the specification fails to disclose a representative number of aminopeptidase substrate species which would be suitable for use in the claimed invention.

As discussed above, though Applicant has disclosed numerous aminopeptidase substrates, they have not identified which substrates, from the lengthy lists provided, would be suitable for use in the claimed composition for detection of each of the claimed target microorganisms. Within claim 1, the

target microorganism are defined as one of *Salmonella, Listeria monocytogenes*, and *Campylobacter*; claim 25 is limited to *Campylobacter*. The specification only discloses that *Campylobacter* lacks L-alanine aminopeptidase (See Spec, page 18); there are no teachings or discussion of additional aminopeptidase which are substantially absent from *Campylobacter*, or teachings or discussion of even a single aminopeptidase which is absent from the target microorganisms, but present in all other microorganisms. It is noted that even L-alanine aminopeptidase substrates do not satisfy this limitation, because gram positive bacteria do not possess L-alanine aminopeptidase, thus L-alanine based substrates are not cleaved by "all non-target microorganisms". Therefore, beyond the use of L-alanine aminopeptidase substrates for detection of *Campylobacter* provided as a pure culture (no competing or 'non-target microorganisms'), in order to successfully make and use the claimed composition, one of ordinary skill in the art would first have to conduct experimentation to determine which, if any, aminopeptidase is substantially absent from each of the claimed target microorganisms yet which is present in all other microorganism. Such is considered to amount to undue experimentation. While it would not be outside the purview of the artisan of ordinary skill to test various microorganisms for different aminopeptidase, due to the large number of aminopeptidase known (which would each need to be tested), and the almost infinite number of microorganisms (again, which would each need to be tested in order to ensure the target microorganism is the only one that substantially lacks the aminopeptidase in question), the amount of experimentation which would be required on the part of the artisan would be considerably extensive and undue. The disclosure does not even present a narrowed range of probable or likely aminopeptidase which could be reasonably expected to be present in all but the target microorganism.

The only embodiment Applicant has clearly enabled is for when the composition is intended for identification of a pure culture sample, known to be gram negative, as *Campylobacter*, wherein the composition comprises (i) a conditionally detectable marker that functions as a viability marker (e.g.

tetrazolium red); (ii) an L-alanine aminopeptidase substrate; and (iii) a growth substrate for specific for enrichment of *Campylobacter*. However, even though Applicant has disclosed how to make this particular composition, it is noted that such a composition would only be able to successfully identify a pure culture sample as *Campylobacter* if it was known previously that the culture was Gram-negative. It was known most Gram-negative bacteria contain the L-alanine aminopeptidase in their cell wall; *Campylobacter* spp are the only Gram-negative bacteria that are negative for L-alanine aminopeptidase. All Gram-positive bacteria are negative for L-alanine aminopeptidase (See, e.g. Manafi et al). Therefore, the composition in question would only be able to identify a L-alanine aminopeptidase negative sample if the sample was free of L-alanine aminopeptidase positive microorganisms (i.e. Gram-positive microorganisms); the presence of any L-alanine aminopeptidase containing bacteria in the sample will prevent the identification (detection) of *Campylobacter*. Both *Campylobacter* and all Gram-positive bacteria samples will give the same reading (positive 'presumptive indicator'/negative 'confirmation indicator'); therefore it would be necessary to know the same being applied is not Gram-positive, but Gram-negative.

Beyond this scope, Applicant has not enabled one skilled in the pertinent art to make and use the claimed invention without undue or unreasonable experimentation.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

With regards to the rejection of claims 1, 5, 7, 10-13, 15, 16 and 25 and 26 under 35 USC 103(a), Applicants have reiterated the previous arguments that the combination of cited references fails to support

a *prima facie* case of obviousness. Specifically, Applicants argue that one of ordinary skill in the art would not have been motivated to add a viability marker (Tuompo et al) to the composition of Manafi et al, as such a viability marker would be unnecessary because formation of colonies is already indicative of viability. Furthermore, Applicants argue that the cited references fail to disclose use of a growth medium which is selective for the target microorganism, thus, even if combined, the products of the prior art would not be capable differentiating between *Campylobacter* and Gram-positive bacteria. Applicants submit the product of the prior art would only be capable of detecting non-*Campylobacter*, Gram-negative bacteria, which is a 'non-target' microorganism, and thus the produce isn't suitable for the intended purpose of the instant invention.

These arguments remain unpersuasive for the reasons of record:

In response to Applicants' argument that one of ordinary skill in the art would not have been motivated to add a viability marker (tetrazolium red) based on the fact that all viable microbes would form colonies (and thus be identifiable as colony forming units) it is respectfully submitted that providing additional confirmation means (confirmation of viability) would have been appropriate to reduce objectivity in reading the results and/or in situations wherein the results are read automatically (such as by machine). Colored detection markers would also have desirable for teaching purposes, to make the results clearer and/or easier to read. While tetrazolium red or other vitality markers may be redundant, their inclusion is still obvious and does not make the instant claims patentable. It is further noted the conditionally detectable marker of the instant invention functions in the same redundant manner- to confirm the presence of target microorganisms, wherein their presence could alternatively be confirmed by identification of colony forming units. Generally, inclusion of additional confirmation markers, while their function may be redundant, is still obvious and does not add a point of novelty.

In response to Applicants' argument that the combination of cited references fails to suggest use of a enrichment media for the target microorganism (enrichment media being defined as a media which

encourages the growth of a target microbe, while inhibiting the growth of non-target microorganisms), it is noted that the current claims do not actually require 'an enrichment media' as defined by the cited prior art, but rather only require the presence of a 'growth supporting medium for the specific enrichment of a target microorganism', this is not being considered identical to enrichment medium. Because the prior art references do disclose a growth-supporting medium that does permit growth of microorganisms, it is still considered to read on the current claims.

Claims 1, 5, 7, 10-13, 15, 16 and 25 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Manafi et al (J Appl Bacteriol, 1990) in view of Molina et al (Enfermedades Infecciosas y Microbiologia Clinica, 1991) and Tuompo et al (US Patent 5,420,017), and further in view of

Manafi et al disclose a method and composition for detecting the presence of Gram-negative bacteria in a sample. The composition of Manafi et al comprises the conditionally detectable marker L-alanine-7-amido-4-methylcoumarin (AAMC), which produces a fluorescent color change when cleaved by the L-alanine-aminopeptidase found in the cell wall of substantially all Gram-negative bacteria except for *Campylobacter* (See Manafi et al, See pages 823, first paragraph & Molina et al, abstract). Manafi et al disclose the fluorogenic substrates were incorporated into Plate Count Agars (which necessarily contain the necessary nutrients and growth factors necessary for the survival of the plated microorganisms, as the bacterial cultures successfully grew on the agars) (See Manafi et al, Pg. 823, col. 2, "Media and Chemicals"). The method of Manafi et al is capable of differentiating between Gram-negative and Gram-positive bacteria as a positive result (fluorescent indicator) is only achieved when Gram-negative bacteria having the L-alanine aminopeptidase are present in the sample.

Tuompo et al also disclose a method and kit for detecting microorganisms in a sample. The method relies on use of a composition comprising a chromogenic reagent in an amount effective to detect

bacteria; preferably the chromogenic reagent is a tetrazolium salt, particularly triphenyltetrazolium chloride (tetrazolium red), which produces a color change from colorless to red upon biochemical reduction by viable bacteria (See Tuompo et al, col. 2, ln 25-35 & claim 4).

It would have been obvious to one of ordinary skill in the art, at the time the invention was made to modify the composition of Manafi et al, which comprised AAMC in an agar plate, to further include tetrazolium red, as taught by Tuompo et al. Including the viability marker tetrazolium red in the agar plate of Manafi et al, would provide an extra measure of quality control in the methods of Manafi et al, as the viability marker would provide a positive reading, indicating the bacteria were successfully transferred in a viable state to the agar plates. As disclosed, the composition of Manafi et al only provides a detectable signal if the sample contains L-alanine aminopeptidase, if the sample is L-alanine aminopeptidase negative, no signal is produced, yet there is no way to determine if the sample is merely negative for L-alanine aminopeptidase or if the sample was not successfully plated. Including the viability marker tetrazolium red would provide an extra measure to ensure the sample was transferred successfully and that a false negative was not obtained due to a dead sample.

It is noted that the instant claims are directed to a composition for detecting the target microorganism, not to a method of detecting target microorganisms. Thus, the target microorganisms, intended to be identified, are considered 'an intended use' of the claimed composition. Therefore, even though the prior art does not teach or suggest identifying the specific target microorganism named in the current claims, the composition suggested by the prior art is one and the same as that currently claimed. Therefore, the invention as a whole would have been prima facie case obvious to one of ordinary skill in the art at the time the invention was made.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALLISON M. FORD whose telephone number is (571)272-2936. The examiner can normally be reached on 8:00-6 M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Allison M. Ford/
Examiner, Art Unit 1651